American Immunization Registry Association (AIRA) Modeling Immunization Registry Operations Workgroup (MIROW)

## MIROW Interactive Workshop: Introduction to the New Topic "Data Consolidation"

April 5, 2016, 1:30 PM – 3:00 PM 2016 AIRA National Meeting, Seattle, Washington

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### Acknowledgement

The MIROW Steering Committee greatly appreciates:

- Enthusiastic participation and contributions of all attendees.
- Invaluable support of the AIRA Staff for scheduling, organizing, and conducting this session.

### **Executive Summary**

The AIRA (American Immunization Registry Association) Modeling Immunization Registry Operations Workgroup (MIROW) has been developing best practice recommendations for immunization information systems (IIS) operations since 2005. This 90-minute workshop, conducted during the 2016 AIRA National Meeting, was an effort to gather input from a larger spectrum of subject matter experts across the IIS community for a best practices guidance document (under development) on the consolidation of demographic and immunization information in IIS. The session was conducted by members of the MIROW Steering Committee. The IIS community of practice was represented by participants from IIS, software vendors, and public health consultants.

The session began with a short presentation "MIROW Interactive Workshop: New Topic Consolidation of Demographic and Immunization Information in IIS". The session then progressed into facilitated small group activities led by five pairs of Steering Committee members aimed to gather feedback on "pains" and solutions" of data consolidation. The discussion focused on the following two themes:

- A consolidated record that incorporates demographic information from various sources about a single patient.
- A consolidated record that incorporates information from various sources about a single vaccination event.

Twenty-two significant "pains" and nineteen significant "solutions" were identified after participants listed then ranked their top five pains and solutions. One member from each group presented the findings to the larger group. Results of this session will be used by the MIROW experts' panel to inform MIROW experts about current IIS practices and help guide the development of the best practices guidance document.

## Workshop Agenda

- 1:35 1:50: Introduction to the consolidated record topic, expectations, and instructions for small groups' breakout sessions.
- 1:50 2:30: Facilitated workshop of small groups to gather input from participants to help guide the development of best practices.
  - Specific focus: data sources' pains and solutions for these pains. Discussion should not be about data sources in general, but rather about data sources' issues as they affect the following two themes:
    - A consolidated record that incorporates demographic information from various sources about a single patient
    - A consolidated record that incorporates information from various sources about a single vaccination event.
  - Along the way we gained a better understanding of current IIS practices and participants learned about practices of their colleagues.
  - o Members of the MIROW Steering Committee facilitated activities of the small workgroups.

- o There were brief introductions of facilitators and participants in the small groups that included their name, where they work, job duties and how long in the IIS community.
- o Discussion/discovery of pains and solutions for the pains
  - Wall posters and 8.5 x 11 sheets for participants with data sources were provided. Each participant also received an illustration of the scope.
  - Groups collected pains with data sources and solutions for these pains participants
    placed post-it notes on the poster (table with data sources); using different color postit notes for pains and solutions.
  - Pains were then ranked and prioritized. Each participant received two colored flags to place on the pains' post-it notes.
- 2:30-2:40: One member from each small group presented their findings five top pains and solutions for these pains to the large group.
- 2:40-2:45: Debrief of the large group about the workshop.
- 2:45-2:46: Closing remarks. Adjourn.

### **MIROW Interactive Workshop – Data Consolidation**

This presentation aimed to give users a better understanding and an introduction to the consolidated record topic expectations and instructions for small groups.

The embedded PDF file contains slides for this presentation.



#### "Pains" and "Solutions"

The main objective was to gather inputs in the form of "Pains" (challenges, issues and barriers) and "Solutions" to those pains from the IIS community for a best practices guidance document that is currently under development on data consolidation. The brainstorming was conducted in the following way:

- Organization. Participants were divided in five small groups. Each small group was facilitated by two members of the MIROW Steering Committee.
  - o Small group 1 (pink), facilitated by Bhavani Sathya and Megan Meldrum
  - o Small group 2 (yellow), facilitated by Brandy Altstadter and David Lyalin
  - o Small group 3 (green), facilitated by Elizabeth Parilla and Warren Williams
  - o Small group 4 (blue), facilitated by Nichole Lambrecht and Katie Reed
  - o Small group 5 (purple), facilitated by Amanda Harris and Kim Tichy
- Brainstorming. Each small group used a poster-size copy of the data sources table (Figure 1), hung on the wall. Participants placed color-coded post-it notes on the table, indicating "pains"

and "solutions" to those pains in association with appropriate parts of the table, i.e., data sources

- Ranking. Each member of a small group ranked identified "pains" and "solutions" by attaching two (2) colored flags to post-it notes.
- Reporting back. Every small group presented their top five "pains" and "solutions" to the large group. Results are presented in Table 1 below.

Data Sources	Consolidation Pains and Solutions	Remarks, parking lot
mmunizing Provider		
Vital Records		
Birthing Hospitals		
Billing Systems		
Medicaid		
Schools		
Health Plans		
Other Sources		

Figure 1. Table of Data Sources for Data Consolidation Small Group Discussion

**Table 1.** Highest-ranked "Pains" and "Solutions" as reported by small groups

- Small group 1 (pink), facilitated by Bhavani Sathya and Megan Meldrum
- Small group 2 (yellow), facilitated by Brandy Altstadter and David Lyalin
- Small group 3 (green), facilitated by Elizabeth Parilla and Warren Williams
- Small group 4 (blue), facilitated by Nichole Lambrecht and Katie Reed
- Small group 5 (purple), facilitated by Amanda Harris and Kim Tichy

ID	Small Group	Data Source	Pain	Solution	Rank
1	1 (pink)	Birthing	No names (baby boy)	Don't take birthing information from hospital.	1
		Hospitals	-Bad address	Consideration of whether EBC reports send birth	
			-Bad names	Hep B	
2	1 (pink)	Immunizing	Address	All historical addresses saved	2
		Provider	-When to update	Mailing – reminder cards	
			-Multiple address	Most complete record – keep address	
			-Multiple types		
3	1 (pink)	Vital Records	Hep B birth dose	1-Decide which source you trust	3
			Vitals vs Hospital	2-Examine trends to identify errors	
				NYC, NYS, NJ all keep vital records	
4	1 (pink)	Immunizing	Two owned (saved) immunizations	1-Update with new missing information from	4
		Provider	Different providers	new provider	
				2-Ignore new information	
5	1 (pink)	Schools	School vs School based health check	Schools based health check is a provider.	5
				FERPA issue – no data received from schools	
6	2 (yellow)	Immunization	Determining which record will show when	Tend toward info for most current vaccine	1*
	-	Provider	patient is queried in the IIS	administered (administered vaccine vs historical	
				vaccines)	
7	2 (yellow)	Immunization	Nicknames being used in place of legal name		2*
		Provider			
8	2 (yellow)	Birthing	'Baby' names coming in from birthing hospitals	Filter out 'baby' name	3*
		Hospitals			

ID	Small Group	Data Source	Pain	Solution	Rank
9	2 (yellow)	Billing Systems	Aligning CPT codes with CVX codes	Move to NDC Codes!	4*
10	2 (yellow)	Medicaid	Medicaid data is less reliable	Work with Medicaid to improve data feed quality	5*
11	3 (green)	Birthing Hospitals	Newborns records are created with non-names "baby boy" "baby girl"	Birthing hospital creates list to compare to VR Just Ignore Run queries on birth mother Matching (?) to run investigations	
12	3 (green)	Billing Systems	Different coding of vaccines than from providers	Get updated feed after the fact Get less reliant on billing system -stop using –use providers Match/merge don't rely	2*
13	3 (green)	Vital Records	Issues with un-named children		3*
14	3 (green)	Remarks/Parking Lot	Legal name (e.g. Bob vs Robert or JR/III) (All Sources)	Find similar last names Have a list of similar names –Rob –Robert –Bob Nickname list Probability linkages	4*
15	3 (green)	Vital Records	Not working to feed date into the IIS	VR data captured manually	5*
16	4 (blue)	Immunizing Provider	Incoming administered record misidentified as a historical record, vice versa	Active DQ review finds issue but often too late SOI not always accurate	1
17	4 (blue)	Vital Records	Vital records -updates -amendments -deceased not all get this and what about adult with name changes (i.e., marriage name changes)	Nothing over writes a birth file number supplied by Vital Records but a provider supplied birth file number can overwrite a null	2
18	4 (blue)	Immunizing Provider	Incoming non-matching demographic information (i.e., name spelling) possibly updating record with incorrect information	Birth record from vitals help clean up	3
19	4 (blue)	Immunizing Provider	Estimated historical dates for vaccination events by immunization provider (i.e., they only captured month and year so they generically assigned a date of vaccination, which was often the first or last day of the month).	Depends on circumstance. Prefer not estimate date may require more follow up	4

ID	Small	Data Source	Pain	Solution	Rank
	Group				
20	4 (blue)	Billing Systems	Billing date for vaccine instead of administration		5
			date		
21	5 (purple)	Immunizing Provider	One record with all historical and another with administered (how to utilize information from both records). e.g. The administered doses were submitted after being reported as historical by another provider.	Contact providers, keep administered doses. Discussion topic dependent upon how the records came to be	1
22	5 (purple)	Immunizing Provider	Immunizing provider sends in name slightly different than vitals	Verify name with vitals	2

#### Note:

Rankings with an \* indicate that this group did not indicate a specific rank on their chart so the flags were counted to determine a rank. The purple group flagged only two items.

#### **Debrief**

At the end of the session participants were asked to share their thoughts on three issues:

Overall impressions.

What did we do well?

What can we do better?

Responses are captured in Table 2 below.

**Table 2.** Participants Debrief Results

Legend: "o" = Overall Impression "+" = What we did well? "-" = What can we do better?

ID	Type	Remarks
1	О	Facilitators were great
2	О	Quick transition to small groups
3	О	Interactive session is awesome
4	О	Description of tasks were great, no confusion
5	+	Repeat next year
6	+	Timing after lunch was good for interactive
7	+	Facilitators were prepared and welcoming to participants
8	-	Room temperature cold
9	-	Better communication prior to conference so the appropriate people can attend
10	-	More time needed for small group discussions
11	-	Ended 15 minutes early – could have used it during small group discussions

## **Next steps**

Materials captured in this Turn-Around Document will be referenced by the MIROW experts' panel on the Record Consolidation topic that is developing best practice guidelines for IIS. The best practice recommendations document is expected to be released by early summer of 2017.

# **Appendix A: Participants**

 Table 3. Attendees

m m	Small Group	Name	Organization	Email	Phone
1	4 (blue)	Amanda Timmons	Oregon Immunization Program	amanda.j.timmons@state.or.us	971-673-0312
2	5 (purple)	Andrew Luker	Arkansas Department of Health	andrew.luker@arkansas.gov	501-537-8966
3	3 (green)	Annette Aguon	Guam Immunization Program	annette.aguon@dphss.gram.gov	671-735-7143
4	5 (purple)	Beth Meadows	North Carolina Department of Health and Human Services – Immunization Branch	beth.meadows@dhhs.nc.gov	252-808-5250
5	3 (green)	Bridget Ahrens	Vermont Department of Health	bridget.ahrens@vermont.gov	802-951-4094
6	5 (purple)	Chris Freedman	Battelle	freedmanc@battelle.org	770-842-7828
7	5 (purple)	Christine Hamilton	Pennsylvania Department of Health	chrhamilto@pa.gov	717-787-5681
8	4 (blue)	Christy Gray	Virginia Department of Health	christy.gray@vdh.virginia.gov	804-864-7928
9	2 (yellow)	Deb Warren	AMCI	debjwarren52@gmail.com	785-393-9451
10	4 (blue)	Hari Siva	Alabama Department of Public Health	hari.siva@adph.state.al.us	334-206-7038
11	1 (pink)	Holly Groom	Kaiser Permanente NW	holly.c.groom@kpchr.org	503-335-6334
12	4 (blue)	Jason Suchon	MetaStar	jsachon@metastar.com	608-266-7914
	2 (yellow)	Jeanne McCoy	MCIR	jmccoy@phdm.org	906-789-8128
14	3 (green)	John Harwood	MCIR	jrharw@kalcounty.com	269-373-5240
15	3 (green)	Josh Davis	SSG	jdavis@ssg-llc.gov	617-571-5867
16	2 (yellow)	Kim Spencer	CDC/IISSB	xlp8@cdc.gov	404-718-4266
17	5 (purple)	Loren Rodgers	CDC/IISSB	lrodgers@cdc.gov	404-718-4835
	1 (pink)	Meghan Collette	Strategic Solutions Group	mcollett@ssg-llc.com	860-671-8226
19	4 (blue)	Melissa Fankhauser	Tennessee Department of Health	melissa.fankhauser@tn.gov	615-741-3904
20	5 (purple)	Miriam Muscoplat	Minnesota Department of Health	miriam.muscoplat@state.mn.us	651-201-3617
	2 (yellow)	Nicole Freeto	Washington State Department of Health	nicole.freeto@doh.wa.gov	360-236-4628
22	4 (blue)	Patricia Swartz	Maryland Department of Health	patricia.swartz@maryland.gov	410-767-3029

ID	Small Group	Name	Organization	Email	Phone
23	1 (pink)	Sara Morgan	Nebraska Department of Health and Human Services	sara.morgan@nebraska.gov	402-471-2139
24	1 (pink)	Sasha DeLeon	Washington State Department of Health	sasha.deleon@doh.wa.gov	360-236-3478
25	3 (green)	Steve Murchie	Envision Technology	smurchie@envisiontechnology.com	303-914-9797
26	1 (pink)	Teneale Chapton	CDC/Nevada WebIZ	tchapton@health.nv.gov	775-684-5913
27	2 (yellow)	Tiffany Pothapragada	Student at Kansas University Medical Center	tpothapragada@kumc.edu	913-523-6260
28	3 (green)	Veronica Rodriguez	Puerto Rico Health Department	vrodriguez@salud.gov.pr	787-765-2929 x3326
29	1 (pink)	Vikki Papadouka	New York City IIS	vpapadou@health.nyc.gov	347-396-2547

Table 4. MIROW Team

ID	Small Group	Name	Organization	Email	Phone	Remarks
1	3 (green)	Warren Williams	Centers for Disease Control and Prevention	wxw4@cdc.gov	(404) 639-8867	MIROW SC Co-Chair
2	n/a	Elaine Lowery	Public Health Consultant	elaine.Lowery@comcast.net	(303) 881-2440	MIROW SC Co-Chair
3	5 (purple)	Amanda Harris	NV State Immunization Program	asharris@health.nv.gov	(775) 684-4258	MIROW SC member
4	1 (pink)	Bhavani Sathya	Vaccine Preventable Disease Program New Jersey Department of Health	bhavani.sathya@dohnj.gov	(609) 826-4861	MIROW SC member
5	2 (yellow)	Brandy Altstadter	Scientific Technologies Corporation	brandy_altstadter@stchome.com	(602) 241-1502	MIROW SC member
6	2 (yellow)	David Lyalin	Centers for Disease Control and Prevention	dil8@cdc.gov	(404) 718-4594	MIROW SC member
7	3 (green)	Elizabeth Parilla	Minnesota Department of Health	elizabeth.parilla@state.mn.us	(651) 210-9022	AIRA Consultant
8	4 (blue)	Katie Reed	HP Enterprise Services	catherine.reed@hpe.com	(404) 648-3868	MIROW SC member
9	1 (pink)	Megan Meldrum	New York State Immunization Information System (NYSIIS)	megan.meldrum@health.ny.gov	(518) 473-2839	MIROW SC member
10	4 (blue)	Nichole Lambrecht	American Immunization Registry Association (AIRA)	nlambrecht@immregistries.org	(202) 552-0208	AIRA Staff
11	5 (purple)	Kimberly Tichy	Iowa Department of Public Health	kimberly.tichy@idph.iowa.gov	(515) 281-4288	MIROW SC member

## Appendix B: Complete list of "Pains" and "Solutions" captured from post-it notes on posters

**Table 5.** "Pains" and "Solutions" captured from post-it notes on posters

- Small group 1 (pink), facilitated by Bhavani Sathya and Megan Meldrum
- Small group 2 (yellow), facilitated by Brandy Altstadter and David Lyalin
- Small group 3 (green), facilitated by Elizabeth Parilla and Warren Williams
- Small group 4 (blue), facilitated by Nichole Lambrecht and Katie Reed
- Small group 5 (purple), facilitated by Amanda Harris and Kim Tichy

ID	Small Group	Data Source/Remarks	Pain	Solution	Votes Received
1	1 (pink)	Immunization	Two owned (saved) immunizations	1-Update with new missing information	4
		Provider	Different providers	from new provider	
				2-Ignore new information	
2	1 (pink)	Immunization	Same provider	Update/overwrite existing data	0
		Provider	Same Imm		
			Diff info (e.g. diff lot #)		
3	1 (pink)	Immunization	Address	All historical addresses saved	2
		Provider	- When to update	Mailing - reminder cards	
			- Multiple address	Most complete record - keep address	
			- Multiple types		
4	1 (pink)	Vital Records	Hep B birth dose	1-Decide which data source you trust	3
			Vitals vs Hosp	2-Examine trends to identify errors	
				NYC, NYS, NJ all keep vital recs	
5	1 (pink)	Vital Records	Demographic – unchangeable parts	DOB, mother's maiden name	0
6	1 (pink)	Birthing Hospitals	No names (baby boy)	Don't take birthing info from hospital	1
			-Bad address	Consideration of whether EBC reports send	
			-Bad names	birth Hep B	
7	1 (pink)	Schools	School vs School based health check	Schools based health check is a provider	5

ID	Small Group	Data Source/Remarks	Pain	Solution	Votes Received
				FERPA issue – no data received from schools	
8	1 (pink)	Remarks/Parking Lot	FERPA		0
9	1 (pink)	Remarks/Parking Lot	Cell phone # update/capture (need to discuss)		0
10	2 (yellow)	Immunization Provider	Determining which record will show when patient is queried in the IIS	Tend toward info for most current vaccine administered (administered vaccine vs historical vaccines)	4
11	2 (yellow)	Immunization Provider	Nicknames being used in place of legal name		1
12	2 (yellow)	Vital Records	What to do when vital stats DOB and name fields are wrong		0
13	2 (yellow)	Vital Records	Gender discrepancies and transgender/gender re-assignment when comparing records		0
14	2 (yellow)	Birthing Hospitals	'Baby' names coming in from birthing hospitals	Filter out 'baby' name	1
15	2 (yellow)	Billing Systems	Aligning CPT codes with CVX codes	Move to NDC Codes!	1
16	2 (yellow)	Medicaid	Medicaid data is less reliable	Work with Medicaid to improve data feed quality	1
17	3 (green)	Immunization Provider	Lack of EHR support Looking to the state for assistance (funding, etc.)		1
18	3 (green)	Immunization Provider	Issue with middle initial		0
19	3 (green)	Vital Records	Issues with un-named children		2
20	3 (green)	Vital Records	Challenging to change a legal document	Amendments to VR data	0
21	3 (green)	Vital Records	Not working to feed date into the IIS	VR data captured manually	1
22	3 (green)	Vital Records	Adoptions – challenging to manage data after the name change (previous name coming in w/ shots Slow to happen	Capture manually (?)	0

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ID	Small Group	Data Source/Remarks	Pain	Solution	Votes Received
23	3 (green)	Birthing Hospitals	Newborns records are created with non- names "baby boy" "baby girl"	Birthing hospital creates list to compare to VR Just Ignore Run queries on birth mother Matching (?) to run investigations	4
24	3 (green)	Billing Systems	Different coding of vaccines than from providers	Get updated feed after the fact Get less reliant on billing system -stop using –use providers Match/merge don't rely	3
25	3 (green)	Medicaid	Lack of fidelity to vaccine code	Less reliance on Medicaid data	0
26	3 (green)	Medicaid	Date of birth off by a few days		0
27	3 (green)	Schools	Schools write the wrong date of vaccination Bad data quality	Don't let school enter Separate system for school (restricted access)	1
28	3 (green)	Schools	Problematic coding of vaccines		0
29	3 (green)	Health Plans	Duplicate and delayed	Data is less trustworthy	0
30	3 (green)	Other Sources		Head Start Military (DOD, VA)	0
31	3 (green)	Remarks/Parking Lot	Legal name (e.g. Bob vs Robert or JR/III) (All Sources)	Find similar last names Have a list of similar names –Rob –Robert – Bob Nickname list Probability linkages	1
32	3 (green)	Vital records best for demographics			0
33	4 (blue)	Immunizing Provider	Incoming non-matching demographic information (i.e., name spelling) possibly updating record with incorrect information	Birth record from vitals help clean up	3
34	4 (blue)	Immunizing Provider	Existing IIS record historical lot # Incoming provider = admin but not lot #	Art vs fact is the challenge Some validations trump all i.e. historical vs admin	1

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ID	Small Group	Data Source/Remarks	Pain	Solution	Votes Received
35	4 (blue)	Immunizing Provider	Incoming administered record misidentified as a historical record, vice versa	Active DQ review finds issue but often too late SOI not always accurate	4
36	4 (blue)	Immunizing Provider	Estimated historical dates for vaccination events by immunization provider (i.e., they only captured month and year so they generically assigned a date of vaccination, which was often the first or last day of the month).	Depends on circumstance. Prefer not estimate date may require more follow up	2
37	4 (blue)	Immunizing Provider	Historical combo vaccination trumps administered single vaccination because combo trumps singles regardless of historical/admin status	Administered vaccination should always trump historical vaccination regardless of vaccine formulation (combo vs single)	0
38	4 (blue)	Vital Records	Vital records -updates -amendments -deceased not all get this and what about adult with name changes	Nothing over writes a birth file number supplied by Vital Records but a provider supplied birth file number can overwrite a null	4
39	4 (blue)	Birthing Hospitals	Non legal first name of baby. How to merge with Vital Records.		1
40	4 (blue)	Billing Systems	Billing date for vaccine instead of administration date		2
41	4 (blue)	Schools	Don't accept school data -too much estimated date		1
42	4 (blue)	Health Plans	HMOs sending in data this is outdated/incorrect		2
43	4 (blue)	Remarks/Incorrect	Inventory decrementation dependent Prisons Adult population cohort definition = birth records i.e. DMV		0

ID	Small	Data	Pain	Solution	Votes
44	<b>Group</b> 5 (purple)	Source/Remarks Immunizing Provider	One record with all historical and another with administered (how to utilize information from both records). e.g. The administered doses were submitted after being reported as historical by another provider.	Contact providers, keep administered doses. Discussion topic dependent upon how the records came to be	Received 5
45	5 (purple)	Immunizing Provider	Name change due to marriage; dups identified, put in queue for manual resolution	Search marriage license database (MN) Can store prior name	0
46	5 (purple)	Immunizing Provider	Same person, 2 addresses – which to keep?	If HL7/electronically submitted, keep address associated with most recent immunization.  If manual, may need to look at audit dates or call submitter	0
47	5 (purple)	Immunizing Provider	Immunizing provider sends in name slightly different than vitals	Verify name with vitals	2
48	5 (purple)	Vital Records	Identifying the patients actual name with vital records truncates pt. name in VR feed because VR name field is limited; characters, special characters, not transmitted correctly	Call VR to confirm name	0
49	5 (purple)	Birthing Hospitals	Birthing hospitals (and IZ providers) sends record with junk SSN 999-99-9999	Contact source of record. Look for and store valid SSN	0